

Left ventricular non-compaction

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A 51-year-old woman without significant history was admitted to the hospital after an episode of ventricular fibrillation. Upon admission, the patient was unconscious, with sinus rhythm, pulmonary venostasis and low blood pressure, without systemic venostasis. The symptoms of ischemic brain injury were detected in a neurological examination, but any focal changes in computed tomography were not present. Cardiomegaly was revealed in a chest X-ray. In echocardiography, left ventricular dilatation, its global hypokinesis and low ejection fraction (ejection fraction 20%) were found. The wall of the distal part of the left ventricle consisted of two layers of myocardium — a thin, compacted, epicardial layer and a thick, noncompacted

(“spongy”) endocardial zone (Fig. 1, 2). The inner layer consisted of multiple myocardial trabeculations and deep intertrabecular recesses communicating with the left ventricular cavity (Fig. 1, 2). The noncompacted zone was thicker, so the ratio of systolic thickness of noncompacted to compacted myocardium layers was above 2.0 ($N/C > 2.0$). In the colour-Doppler and e-flow imaging the deep intertrabecular recesses were filled with blood from the ventricular cavity (Fig. 3, 4). No other structural and functional heart abnormalities were present in the echocardiogram. Left ventricular non-compaction was established in the diagnosis of the primary cardiomyopathy. The symptoms of overt heart failure regressed during typical medication.

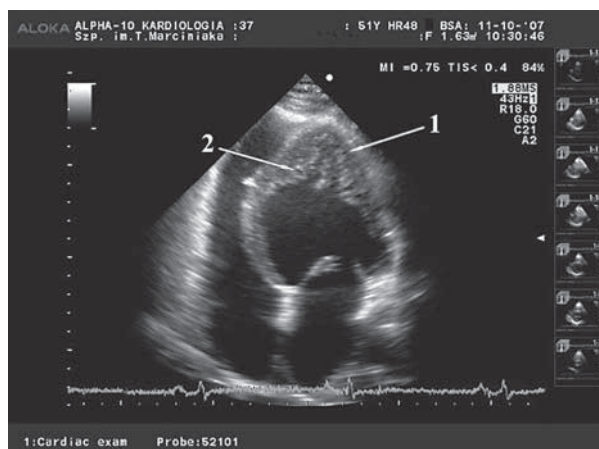


Figure 1. Apical 4-chamber view (A4C), showing two layers of myocardium — thin, compacted, epicardial layer (arrow 1) and thick, “spongy” (noncompacted) endocardial zone (arrow 2).

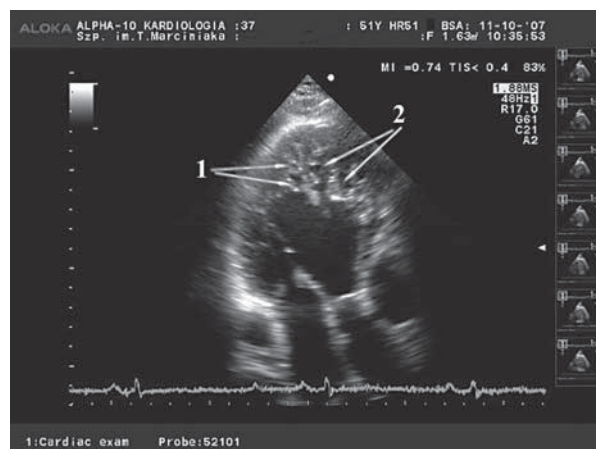


Figure 2. Apical 3-chamber view (A3C), showing multiple myocardial trabeculations (arrows 1) and deep intertrabecular recesses (arrows 2) communicating with the left ventricular cavity.

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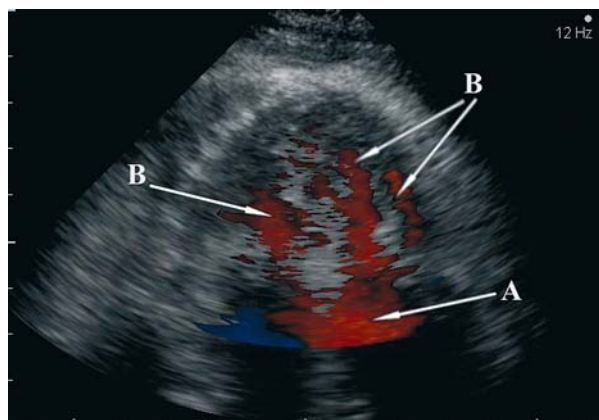


Figure 3. Colour-Doppler in apical 4-chamber view (A4C, shortened view), showing blood flow between the left ventricular cavity (arrow A) and the intertrabecular recesses (arrows B).

The residual neurological deficiency was mild. Holter-ECG recording revealed few episodes of non-sustained ventricular tachycardia. An automated cardioverter-defibrillator was implanted in the patient.

Oral anticoagulant was recommended for the prevention of thrombo-embolic complications. It should be emphasized that the case presents

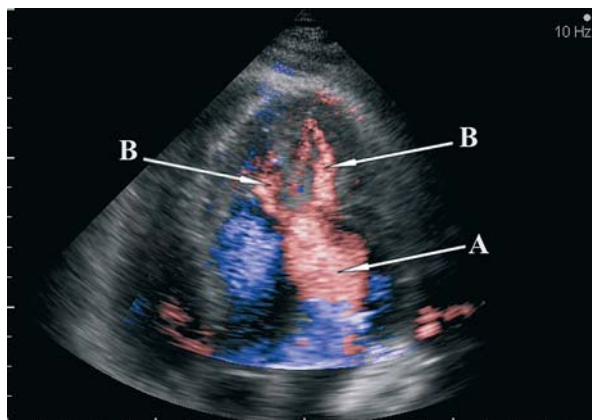


Figure 4. E-flow imaging in apical 4-chamber view (A4C), showing blood flow between the left ventricular cavity (arrow A) and the intertrabecular recesses (arrows B).

almost all major symptoms and complications of this rare cardiomyopathy.

Acknowledgements

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